

## Amendments to the Claims

*Please amend the claims, without prejudice, to read as follows:*

What Is Claimed Is:

1. (Currently Amended) A method for coating ultrafine particles with a polymer, comprising:
  - preparing a solution of a polymer in an organic solvent;
  - suspending a quantity of insoluble ultrafine particles in said solution to form a suspension; and
  - combining a supercritical fluid as an antisolvent with said suspension in a non-vibrating high pressure vessel to cause the polymer to precipitate from said solution and coat the surface of at least a portion of said quantity of suspended ultrafine particles to produce polymer-coated ultrafine particles;
  - providing a suspension delivery system and an antisolvent supply system;
  - wherein said insoluble ultrafine particles are nanoparticles or submicron particles having a particle size of less than about 500 nm; and
  - wherein the polymer concentration of said polymer with respect to said solvent in said solution is less than about 4.0 mg/ml so as to minimize agglomeration of said polymer-coated ultrafine particles;
  - wherein the insoluble ultrafine particles are substantially insoluble in the organic solvent;
  - wherein the polymer-coated ultrafine particles are in the form of loose agglomerates or individual particles;
  - wherein the thickness of the polymer coating on the surface of the polymer-coated ultrafine particles is less than about 75 nm; and
  - wherein the antisolvent is combined with the suspension by:
    - (i) supplying the antisolvent to the non-vibrating high pressure vessel using the antisolvent supply system; and
    - (ii) delivering the suspension into the antisolvent using the suspension delivery system.

2. (Currently Amended) The method of claim 1, wherein said insoluble ultrafine particles comprise an active pharmaceutical compound and said supercritical fluid is carbon dioxide.

3. (Canceled)

4. (Previously presented) The method of claim 1, wherein said polymer content of said polymer-coated ultrafine particles is up to about 25 weight percent based on the total weight of the polymer-coated ultrafine particles.

5. (Original) The method of claim 1, wherein said polymer is selected from the group consisting of:

an acrylic polymer, a polylactic acid polymer, a polylactic acid-glycolic acid polymer, and combinations thereof.

6. (Previously presented) The method of claim 1, wherein said ultrafine particles include at least one drug, gene or bioactive agent, and wherein the polymer-coated ultrafine particles function to provide controlled release of said at least one drug, gene or bioactive agent.

7. (Original) The method of claim 1, further comprising:  
flushing the polymer-coated ultrafine particles to remove any residual organic solvent therefrom.

8. (Original) The method of claim 7, wherein said supercritical fluid is supercritical carbon dioxide and wherein said flushing involves contacting said polymer-coated ultrafine particles with substantially pure carbon dioxide.

9. (Canceled)

10. (Currently Amended) The method of claim 1, ~~further comprising:~~ wherein the suspension providing a polymer solution delivery system includes a capillary tube or nozzle, an antisolvent supply system, and a high pressure vessel;  
~~—supplying said antisolvent to said high pressure vessel using said antisolvent supply system; and~~  
~~—delivering said polymer solution to said high pressure vessel using said polymer solution delivery system.~~

11. (Currently Amended) The method of claim 10, wherein ~~said polymer solution includes at least one polymer and at least one organic solvent~~ the suspension is delivered into the antisolvent by spraying the suspension through the capillary tube or nozzle into the non-vibrating high pressure vessel.

12. (Canceled)

13. (Canceled)

14. (Previously presented) The method of claim 1, wherein said method is effected at a pressure selected to minimize agglomeration of said polymer-coated ultrafine particles.

15. (Previously presented) The method of claim 14, wherein said selected pressure does not function to depress the glass transition temperature of said polymer by compressing the supercritical fluid.

16. (Previously presented) The method of claim 1, wherein said method is effected at a temperature selected to minimize agglomeration of said polymer-coated ultrafine particles.

17. (Previously presented) The method of claim 16, wherein said selected temperature is less than the glass transition temperature of the polymer.

18. (Original) The method of claim 1, wherein said antisolvent is supercritical carbon dioxide.

19. (Original) The method of claim 1, wherein said antisolvent is supercritical ammonia.

20. (Original) The method of claim 1, wherein said antisolvent is a composite supercritical fluid.

21. (Original) The method of claim 1, wherein said organic solvent is acetone.

22. (Currently Amended) The method of claim 1, wherein ~~said supercritical fluid~~ the antisolvent is combined with said suspension ~~in two stages, by:~~

(i) wherein a first stage comprises adding a first amount of antisolvent delivering the suspension into the antisolvent until saturation of said polymer in said suspension is reached, and

~~(ii) wherein a second stage comprises adding a second amount of antisolvent~~  
delivering the suspension into the antisolvent until super-saturation of said polymer in said suspension is reached or a phase transition via nucleation and precipitation of said polymer takes place on a surface of said ultrafine particles to form a polymer coating thereon.

23. (Original) The method of claim 1, wherein said ultrafine particles include at least one active pharmaceutical compound and at least one diluent or filler.

24. (Original) The method of claim 23, wherein said diluent or filler comprises from 1 to 50 weight percent of said ultrafine particles.

25. (Original) The method of claim 23, wherein said diluent or filler is selected from the group consisting of lactose, dextrose, cellulose and combinations thereof.

26. (Currently Amended) The method of claim 1, further comprising applying a force to said solution after the insoluble ultrafine particles are suspended therein and before the antisolvent is combined with the suspension so as to break up agglomerates of ~~polymer-coated~~ the insoluble ultrafine particles formed within said suspension.

27. (Original) The method of claim 26, wherein said force is applied by a sonicator or ultrasonicator.

28. (Original) The method of claim 1, wherein said polymer-coated ultrafine particles have application in at least one of the following applications: a pharmaceutical application, a food application, a chemical application, a pesticide application, a polymer application, coating application, a catalyst application, a conductive ink application and an energetic materials application.

29. (Withdrawn) Polymer-coated ultrafine particles produced according to a method that comprises:

preparing a solution of a polymer in an organic solvent;  
suspending a quantity of ultrafine particles in said solution; and  
combining said suspension with a supercritical fluid as an antisolvent to cause at least a portion of said quantity of suspended ultrafine particles to precipitate from said solution as said polymer-coated ultrafine particles.